

## PUBLIC UTILITIES COMMISSION

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July 27, 2015

**GA2013-47**

Mr. Jimmie Cho, Senior Vice President  
Southern California Gas Company  
Gas Operations and System Integrity  
555 West Fifth Street, GT21C3  
Los Angeles, CA 90013

SUBJECT: General Order 112-E Inspection of the Southern California Gas Company's and San Diego Gas and Electric Company's Gas Transmission Pipeline Integrity Management Program.

Dear Mr. Cho:

The staff of Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order (G.O) 112-E, Part 1 inspection of the Southern California Gas Company's and San Diego Gas and Electric Company's Gas Transmission Pipeline Integrity Management Program (TIMP) on October 21-25, October 28-November 1 and November 4-8, 2013. These two companies are collectively referred to as Sempra.

SED separated the Sempra TIMP Inspection into two parts: Part 1 consisted of in-depth review of Sempra's TIMP plan, procedures and certain parts of its implementation records. Part 2 of the inspection was scheduled for 2015, with part of that inspection being completed; part 2 will consist of a validation review of the Sempra TIMP implementation records and field verification.

During the Part 1 inspection, SED used the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety's "Gas Integrity Management Inspection Protocols with Results Form" as a reference guide to conduct the inspection. SED's inspection findings are noted on the attached "Sempra 2013 TIMP Inspection Findings Summary" (Summary).

Please provide a written response within 45 days of your receipt of this letter indicating measures taken by Sempra to address the findings noted in the Summary. If you have any questions, please call Matthewson Epuna at (213) 576-7014 or Paul Penney at (415) 703-1817.

Sincerely,

A handwritten signature in blue ink, reading "Kenneth A. Bruno", is positioned above the typed name.

Kenneth Bruno, Program Manager  
Gas Safety and Reliability Branch  
Safety and Enforcement Division

cc: Paul Penney, SED  
Jeff Koskie, Sempra  
Mahmoud Intably, SED

**Sempra 2013 TIMP Inspection Summary**  
**October 21-25, October 28-November 1, and November 4-8, 2013**

**CPUC Identified Probable Violations:**

**I. Protocol Area B. Baseline Assessment Plan**

**Protocol B.01.a. states:**

*“B.01.a Verify that the operator followed ASME B31.8S-2004, Section 6.2 and that the assessment method selected for each covered segment addresses all of the threats identified for the segment. More than one assessment tool may be necessary to address all applicable threats to a covered segment. [§192.919(b), §192.921(a), §192.921(c), and §192.921(h)]”*

Title 49 CFR Part 192, §192.917(c) states in part:

*“Risk Assessment. An operator must conduct a risk assessment that follows ASME/ANSI B31.8S, section 5, and considers the identified threats for each covered segments for baseline and continual reassessments..., and to determine what additional preventive and mitigative measures are needed for the covered segment.”*

Title 49 CFR Part 192, §192.919 states in part:

*“An operator must include each of the following elements in its written baseline assessment plan: ... (b) The methods selected to assess the integrity of the line pipe, including an explanation of why the assessment method was selected to address the identified threats to each covered segment. The integrity assessment method an operator uses must be based on the threats identified to the covered segment. (See §192.917.) More than one method may be required to address all the threats to the covered pipeline segment;”*

Sempra identified Incorrect Operations and the Equipment Failure threat as some of the potential threats on its pipeline segments. However, Sempra’s written plan failed to identify an integrity assessment method or identify preventive and mitigative measures capable of addressing these specific threats. In addition, Sempra did not conduct an assessment to address the threats to covered segments susceptible to or with known history of incorrect operations and/or equipment failures. An operator’s integrity assessment needs to be proactive and investigative in nature. Sempra did not provide a justification to explain why it was not necessary to include an integrity assessment in its TIMP program procedures and standards to address incorrect operations and equipment failure threats in spite of the fact that Sempra had two reported cases of incorrect operations in January 6, 2013 and April 1, 2013 that were not integrated into its risk analysis. Therefore, Sempra is in violation of G.O 112-E, Reference Title 49 CFR Part 192, §192.919(b) and §192.921(a)

**II. Protocol Area M. Communications Plan**

**Protocol M.02.a. states:**

*“M.02.a. Verify that provisions exist to address safety concerns raised by: PHMSA and State or local pipeline safety authorities (when a covered segment is located in a State where PHMSA has an interstate agent agreement). [[§192.911\(m\)\(1\)](#) and [§192.911\(m\)\(2\)](#)].”*

Title 49 CFR, Part 192 §192.13(c) states in part:

“(c) Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.”

Sempra’s program procedure (TIMP 19) and standard addressed external and internal communication processes pertaining to its integrity management efforts and results. An effective pipeline integrity management internal communications builds personnel support of the IM program and shares with all participating personnel about the progress and problems of the integrity management program. On December 27, 2012, Sempra reported discovery of anomalies from pigging activities and subsequent Safety Related Conditions (SRC) to the Commission that was discovered under its pipeline integrity management efforts on pipelines 293 and 7000. However, Sempra was unable to demonstrate that the results of these discoveries were communicated internally to all the participating integrity management personnel in accordance with its program procedure. Sempra did not provide adequate documentation to demonstrate how it communicated the discovery of the SRC and its results to other personnel whose operations may be affected by the SRC. Therefore, Sempra is in violation of 49 CFR Part 192, §§192.13(c) and 192.911(m).

In addition, Sempra must modify its program procedure and standard to address the process of communicating information on “Lessons Learned” to all participating personnel and specify the internal communication media.

### **CPUC Concerns/ Recommendations:**

#### **I. Protocol Area A. Identify HCAs:**

##### **Protocol A.06.a. states in part:**

*“A.06.a. Verify the operator’s integrity management program includes documented processes for how new information that shows a pipeline segment impacts a high consequence area is identified and integrated with the integrity management program. The program is to identify and analyze changes for impacts on pipeline segments potentially affecting high consequence areas.”*

Sempra’s program procedure, TIMP 3 sections 7, 8 & 9 referenced Sempra’s Gas Standards (standard) SCG 192.02 and SDG&E G8170, section 4.5, to address how Sempra will manage new information when a pipeline segment impacts a high consequence area is identified and integrated with its IM program. However, neither of these Standards identified roles nor assigned responsibilities, and the frequency for identifying and integrating new information that impacts a high consequence area. Although Sempra’s TIMP 3 section 8 generally covers annual surveillance of high consequence areas, SED recommends that Sempra modify its program procedures and the referenced standards to address in sufficient detail the roles, responsibilities and frequency of identification and analysis of changes that impacts pipeline segments in high consequence areas.

## **II. Protocol Area B. Baseline Assessment Plan:**

### **Protocol B.06.a. states:**

*“B.06.a. Verify that the operator’s process has requirements to keep the BAP up-to-date with respect to newly arising information, applicable threats, and risks that may require changes to the segment prioritization or assessment method. [[§192.911\(k\)](#) & [ASME B31.8S-2004, Section 11](#)]”*

Sempra’s program procedures (TIMP 8) and gas standards did not explicitly require the Baseline Assessment Plan to be revised and documented based on the results of completed assessments, newly acquired information, or whenever there is any reason to believe that the segment attributes have changed and could affect HCAs. In addition, Sempra’s TIMP 8 procedure and Gas Standards SCG 192.02, G8170, SCG 167.0208/G8178 and SCG 167.0215/G8187 did not define the minimum data set, such as purchase or acquisition of pipeline systems, that may require a revision or update to the Baseline Assessment Plan. Sempra should modify its program procedures and standards to address in sufficient detail, the minimum data set to be reviewed that may require a revision to the Baseline Assessment Plan whenever there is any changes occur that could affect HCAs. Sempra must adequately document any revisions made to its Baseline Assessment Plan.

## **III. Protocol Area C. Identify Threats, Data Integration, and Risk Assessment:**

### **Protocol C.01.a. states in part:**

*“C.01.a. If the operator is following the prescriptive or performance-related approaches, verify that the following categories of failure have been considered and evaluated: [[§192.917\(a\)](#) and [ASME B31.8S-2004, Section 2.2](#)]...”*

*x. cyclic fatigue or other loading condition.”*

Title 49 CFR, Part 192 §192.917(e)(2) states:

“Cyclic fatigue. An operator must evaluate whether cyclic fatigue or other loading condition (including ground movement, suspension bridge condition) could lead to a failure of a deformation, including a dent or gouge, or other defect in the covered segment. An evaluation must assume the presence of threats in the covered segment that could be exacerbated by cyclic fatigue. An operator must use the results from the evaluation together with the criteria used to evaluate the significance of this threat to the covered segment to prioritize the integrity baseline assessment or reassessment.”

Sempra identified all the potential threats listed in ASME B31.8S-2004. However, Sempra’s “white paper” on Cyclic Fatigue had a number of issues.

1. Sempra did not adequately document all potential primary and secondary causes of Cyclic Fatigue. Sempra’s white paper did not consider other unique loading conditions that may cause cyclic fatigue. Sempra must modify its program procedure and standards to address in sufficient detail, consideration of other loading conditions that may cause

or contribute to cyclic fatigue and incorporate this into the TIMP program procedures and standards.

**Protocol C.01.e states:**

*“C.01.e. Verify that the approach appropriately considers industry data and experience.”*

Sempra’s program procedures and standards did not adequately address the consideration of “industry data and experience”. Operators’ data input into risk models and evaluation processes should reflect insights from the operator’s failure experience, operator failure precursor experience, and applicable industry experience. The operators’ periodic review and analysis of this information can provide indications of potential failure causes and consequences for the operator’s pipeline. SED recommends that Sempra modify its program procedures and standards to address in sufficient details, the requirement to periodically review and analyze industry data and its own operating experience in its risk models and evaluation processes.

**Protocol C.02.a. states in part:**

*“C.02.a. Verify that the operator has in place a comprehensive plan for collecting, reviewing, and analyzing the data. [ASME B31.8S-2004, Section 4.2 and ASME B31.8S-2004, Section 4.4] ....”*

Sempra’s Standard SCG 167.0200 references the following forms for data collection: PCMR, Form 2112 and Form 2112SD. However, there is no explicit requirement in the TIMP Standard to use these forms for data collection, integration and analysis especially during routine operation and maintenance bell-hole inspections. It was unclear from review of Sempra’s TIMP 4 and Standard SCG 167.0200, how Sempra ensures the use of these forms at every bell-hole inspection. Also, it was unclear from the review of Standard SCG 167.0200, who or which TIMP group is responsible for collecting and analyzing the data for quality, accuracy and consistency, and verifying that all the collected data are integrated and the timeline for completing submitted Forms 2112 and 2112SD data integration. In a nutshell, establish a robust QA/QC for bell-hole inspections, analysis and integration.

SED recommends that Sempra modify its program procedures and standards to require the mandatory use of these forms in every bell-hole inspection and identify roles and responsibilities for data analysis process and integration of Form 2112 and Form 2112SD data.

**Protocol C.03.c. states in part:**

*“C.03.c. Verify that the risk assessment explicitly accounts for factors that could affect the likelihood of a release and for factors that could affect the consequences of potential releases, and that these factors are combined in an appropriate manner to produce a risk value for each pipeline segment. [ASME B31.8S-2004, Section 3.1, ASME B31.8S-2004, Section 3.3, ASME B31.8S-2004, Section 5.2, ASME B31.8S-2004, Section 5.3 and ASME B31.8S-2004, Section 5.7(j)] Verify that the risk assessment approach includes the following characteristics: ...*

iii. *The risk assessment approach integrates the results of pipeline inspections in the development of risk estimates* [[ASME B31.8S-2004, Section 5.7\(d\)](#)];... ”

Sempra currently captures the results of reassessments and other activities in a database and integrates this data into its risk assessment process. However, the Sempra TIMP Plan and Standard does not require or specify incorporation of all reassessment results and other inspection activities into the database. SED recommends that Sempra modify its IM program procedures and standards to address in sufficient detail, the integration of all reassessment results and other inspection activities.

#### IV. **Protocol Area D. DA Plan:**

##### **Protocol D.02.a. states:**

*“Verify that the operator identifies and collects adequate data to support ECDA pre-assessment. [NACE RP0502-2002, Section 3.2]”*

Sempra explained how it uses its feasibility analysis data to determine a minimum critical data set required to proceed with the ECDA inspection process. , However, Sempra’s IM program procedures and standards did not define the minimum data requirements critical to the success of the ECDA Pre-assessment process (NACE RP0502-2002, Section 3.2.1) and steps taken where sufficient data could not be collected.

Sempra must modify its IM program procedure and standards to address in sufficient details how it determines the feasibility of using ECDA, including an established minimum required data sets critical to the success of the ECDA process and reference it in its program procedures and standards.

##### **Protocol D.02.c. states in part:**

*“D.02.c. Verify that the operator complies with all requirements for appropriate indirect inspection **tools selection**: [[NACE RP0502-2002, Section 3.4](#), [NACE RP0502-2002, Table 2](#), and [192.925\(b\)\(1\)\(ii\)](#)] ... ”*

Sempra’s procedures did not adequately document the basis for its tool selection. SED recommends that Sempra modify its IM program procedures and standards to address in sufficient detail its basis for its tool selection and include tool selection for cased pipes.

##### **Protocol D.03.a. states in part:**

*“D.03.a. Verify that the operator **conducts indirect examination measurements** in accordance with [NACE RP0502-2002, Section 4.2](#)..... ”*

SEMPRA's spacing intervals specified in its ECDA program procedures and standards exceeded the recommended spacing interval referenced within GTI PIM Protocol Table 4.4.2. Sempra provided SED with verbal reasoning for why the existing industry studies and recommendations such as GTI PIM did not really invalidate Sempra's current practice and its spacing interval. However, SED understood the GTI PIM spacing interval recommendation to mean that the indirect inspections will be conducted at spacing intervals close enough for a detailed assessment and aid the inspection tool in detecting and locating suspected corrosion activity on the ECDA region. Sempra must review the spacing interval requirements and revise its table to adopt the GTI PIM table, or prepare a "white paper" detailing its rationale for not using the spacing intervals recommended by GTI PIM in Table 4.4.2, and include the logic for why narrowing the spacing interval is not justified when the presence of defect is suspected in an area (as required by Part 192.925(b)(2)(ii)). Or Sempra should reference an industry accepted practice or standard that supports its spacing intervals depicted in Sempra's Standard 167.0209, Table 4.1.

**Protocol D.05.c. states in part:**

*"D.05.c. Verify that performance measures for ECDA effectiveness have been defined and are monitored. [[§192.925](#), [§192.945\(b\)](#) and [NACE RP0502-2002, Section 6](#)]....."*

Sempra's IM program procedures and standards require recording the number of indications found, but the written procedure did not address in sufficient detail criteria for assessing long term effectiveness of the ECDA process. We recommend that Sempra include the following performance measures listed in NACE RP0502-2002, Section 6 to measure and monitor the number of reclassifications and reprioritizations and the frequency at which immediate or scheduled indications arise from this process and use it to assess the reliability of the process:

1. Measure and monitor the number of reclassification and reprioritizations that occur during the ECDA process (NACE RP0502-2002, Section 6.4.3.1.1).
2. Measure the frequency that immediate and scheduled indications arise during the indirect examination process (NACE RP0502-2002, Section 6.4.3.3.1) and etc.

SED recommends that Sempra modify its IM program procedures and standards to address in sufficient detail, its definition of effectiveness of the ECDA process, establish criteria to measure and monitor the long term effectiveness of ECDA and how Sempra monitors the established performance measures.

**Protocol D.05.d. states:**

*"D.05.d. Verify the operator's process has incorporated feedback at all appropriate opportunities throughout the ECDA process to demonstrate feedback and continuous improvement. [[§192.907\(a\)](#) and [NACE RP0502-2002, Section 6.5](#)]"*

Sempra's IM program procedures and standards did not clearly describe how it incorporates feedback from remediation activities and the Direct Examination validation findings of "actual vs. predicted". For instance Sempra's program procedures and Standards did not describe how feedback will be documented, evaluated and executed. SED recommends that



Sempra modify its IM program procedures and standards to address in sufficient detail the documentation, evaluation and execution of feedback from remediation activities and Direct Examination validation findings.

**Protocol D.07.c. states in part:**

*“D.07.c. Verify that the operator integrates the data collected and uses the integrated data analysis to evaluate and document the following ...”*

Sempra Gas Standard, SCG 167.0224 Section 7.3.2 did not establish essential data needed to determine applicability of ICDA as an assessment method. Sempra must modify this standard to include a clear definition of non-essential and essential data and its application.

V. **Protocol Area E. Remediation:**

**Protocol E.02.a. states:**

*“E.02.a. Verify the program requires a temporary pressure reduction or the pipeline to be shut down upon discovery of all immediate repair conditions. [[§192.933\(d\)\(1\)](#)]”*

Sempra’s IM program procedures and standards addressed the requirement to take a reduction in operating pressure of the pipeline upon discovery of an immediate repair condition. However, Sempra’s program procedure (TIMP 10, Section 4.3) and standard did not adequately address shutting down the pipeline in cases where pressure reduction is insufficient to ensure pipeline integrity and public safety. SED recommends that Sempra modify its IM program procedures and standards to address in sufficient detail, requirements to take a reduction in operating pressure or shut down the pipeline upon discovery of an immediate repair condition, especially cases where pressure reduction is insufficient to ensure pipeline integrity and public safety. In addition, SED recommends that Sempra review and revise its program procedures with respect to the process and frequency of monitored conditions.

VI. **Protocol Area F. Continual Evaluation and Assessment:**

**Protocol F.01.a. states:**

*“F.01.a. Verify that periodic evaluations are conducted based on a data integration and risk assessment of the entire pipeline as specified in §192.917. The evaluation must consider the following: [[§192.937\(b\)](#) and [192.917](#)]*

- i. Past and present assessment results*
- ii. Data integration and risk assessment information [[§192.917](#)]*
- iii. Decisions about remediation [[§192.933](#)]*
- iv. Additional preventive and mitigative actions [[§192.935](#)]”*

Sempra’s IM program procedure, TIMP 13, Section 4 and Gas Standard SCG 167.0215 did not adequately address data integration and data alignment. SED recommends that Sempra modify its applicable IM program procedures and standards to address in sufficient detail,



“data integration and alignment” for the entire pipeline instead of just the “assessed” pipeline.

In addition, the periodic evaluations must consider cyclic fatigue and other loading conditions (including ground movement, suspension bridge condition) that could lead to failure of a deformation, including dent or gouge, or other defect in a covered segment.

## VII. **Protocol Area H. Preventive and Mitigative Measures:**

### **Protocol H.01.a. states:**

*“H.01.a. Verify that the process for identifying additional measures is based on identified threats to each pipeline segment and the risk analysis required by §[192.917](#). [Note: [Protocol H.08](#) addresses the implementation decision process for additional preventive and mitigative measures.] [§[192.935\(a\)](#)]”*

Sempra’s IM program procedure (TIMP 12) and Standard (SCG 167.0214 Section 4.3) did not adequately address Preventative and Mitigative Measures for all existing and potential threats. Sempra’s program procedure addressed only Preventative and Mitigative (P&M) Measures for threats that are “turned on” based on the threshold from its risk analyses model. Sempra’s IM program and procedure may have neglected P&M measures for potential threats that are not “turned on” because of its lower risk ranking score. The threats that the operator’s process must consider include, but are not limited to those identified in ASME B31.8S-2004, Section 2.2, and should not be driven solely by the BAP risk ranking scores. SED recommends that Sempra modify its IM program procedure and standard to address in sufficient detail, the identification, and scheduling of additional P&M measures for all existing and potential identified threats to each pipeline segment, and the risk analysis required by §192.917 are used in determining appropriate preventive and mitigative measures.

### **Protocol H.01.b. states:**

*“H.01.b. Verify that additional measures evaluated by the operator cover a spectrum of alternatives such as, but not limited to, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs. [§[192.935\(a\)](#)]”*

Sempra’s program procedure and standard SCG 167.0214, Section 4.9, addressed the alternatives listed in ASME B31.8S-2004, and Part 192, Subpart O. However, alternatives such as operating temperature reduction and hydro-tests are missing from the Sempra’s list of alternative additional measures. Sempra must modify its IM program procedure and standard to ensure that all of the alternatives listed in ASME B31.8S-2004, and the code are considered and integrated as potential P&M measures.

### **Protocol H.02.a. states in part:**

*“H.02.a. Verify implementation of enhancements to the §192.614-required Damage Prevention Program with respect to covered segments to prevent and minimize the consequences of a release, and that the enhanced measures include, at a minimum: [Note: As noted in Protocol H.03 and Protocol H.04, a subset of these enhancements are required for pipelines operating below 30% SMYS and for plastic transmission pipelines.] [§192.935(b)(1)] ...*

*iv. Monitoring of excavations conducted on covered pipeline segments by pipeline personnel. [§192.935(b)(1)(iv)]*

*1. When there is physical evidence of encroachment involving excavation that the operator did not monitor near a covered segment, verify that the area near the encroachment must be excavated or that an above ground survey using methods defined in NACE RP0502-2002 must be conducted. [§192.935(b)(1)(iv)] ..... ”*

Sempra’s standard SCG 167.0214, Section 4.9, addressed enhanced measures it will implement when there is evidence of encroachment involving excavation that the operator did not monitor near a covered segment. However, this standard did not make it a mandatory requirement to perform the aboveground survey or the excavation of the pipeline segment whenever there is physical evidence of encroachment to determine if there is damage to the pipeline segment. Sempra must modify its IM program procedures and standards to mandate the performance of an aboveground survey or excavation of the pipeline segment whenever there is a physical evidence of encroachment to determine if there is damage to the pipeline segment.

**Protocol H.03.b. states in part:**

*“H.03.b. For pipelines operating below 30% SMYS located in a class 3 or 4 area but not in a high consequence area: ..... iv Verify that the operator performs semi-annual leak surveys (quarterly for unprotected pipelines or cathodically protected pipe where electrical surveys are impractical). [§192.935(d)(3)and §192 Table E.II.1].”*

Sempra’s IM program procedure, TIMP.12, Page 8, addressed the additional preventative and mitigative measures required in §192.935(d)(3) (semi-annual and quarterly leak survey requirement for pipelines operating below 30% SMYS located in a high consequence area and non-HCA’s but in Class 3 or Class 4 area). However, Sempra’s IM program procedure, TIMP.12, §4.1, Page 8 stated that semi-annual leak surveys will be conducted on “all non-HCA segments which operate in a Class 3 and on a quarterly basis in class 4 locations”. Part 192 §192.935(d)(3) require Operators with pipeline operating below 30% SMYS located in a Class 3 or Class 4 area but not in a high consequence area to follow the requirements in paragraph (d)(3), which states “Perform semi-annual leak surveys (quarterly for unprotected pipelines or cathodically protected pipe where electrical surveys are impractical).” SED recommends that Sempra modify its program procedure and revise Table 1 in its Standard to adequately address the requirements of Part 192 §192.935(d)(3).

**Protocol H.06.a. states in part:**

*“H.06.a. Verify that the operator makes a determination of whether or not corrosion exists on a covered pipeline segment that could adversely affect the integrity of the line (conditions specified in §192.933). [§192.917(e)(5)]. i. If such corrosion is identified, then verify that: ...*

*2. A schedule is established for evaluating and remediating, as necessary, the similar segments consistent with the operator's established operating and maintenance procedures under Part 192 for testing and repair. [§192.917(e)(5)]. ”*

Sempra's program procedure and standard, SCG 167.0214 did not adequately address the scheduling, evaluation and remediation of pipeline segments with similar coating or operating conditions. Sempra must modify its program procedure and standard to establish a schedule for systematic evaluation and remediation as necessary, for similar segments consistent with the operator's established operating and maintenance procedures under Part 192 for testing and repair. The schedule should provide a basis or decision making process by which other similar pipeline segments will be investigated and/or excavated and document change control provisions.

**Protocol H.08.a. states:**

*“H.08.a. Verify that a systematic, documented decision-making process is in place to decide which measures are to be implemented, involving input from relevant parts of the organization such as operations, maintenance, engineering, and corrosion control. [§192.935(a)] ”*

Sempra's IM program procedures and standard, SCG 167.0214, Section 4.4 did not adequately address a schedule for implementation of additional preventive and mitigative measures and other implementation plans. SED recommends that Sempra modify its IM program procedures and standards to address both the decision-making process, and the basis for the decisions and document the following:

- Schedule for implementation and other implementation plans
- Selection of candidate P&M measures for consideration
- Decisions about which candidate measures to implement (or not implement)
- Reason(s) for decisions made, including the decision's anticipated effect on pipeline risk

**Protocol H.08.b. states:**

*“H.08.b. Verify that the decision-making process considers both the likelihood and consequences of pipeline failures. [§192.935(a)] ”*

Sempra program procedures and standard, SCG 167.0214, Section 4.1.1 addressed segments and facilities with the highest risk from its gross or overall risk scores for additional preventive and mitigative actions. While this is not a prohibited practice, it may not contain enough information to identify the most effective P&M measures for reducing risk. SED recommends that Sempra determine which factors affect risk the most (i.e., the "risk drivers") and determine effective preventive and mitigative measures against the dominant risk factors based on likelihood and the consequences of the pipeline failure.

## **VIII. Protocol Area I. Performance Measures:**

### **Protocol I.01.a. states in part:**

*“I.01.a. Verify the process for measuring IM program effectiveness includes the elements necessary to conduct a meaningful evaluation?”*

*An adequate process for measuring IM program effectiveness should have the following characteristics:*

- *Includes the use of periodic self-assessments, internal and/or external integrity management program audits, management reviews, or other self-critical evaluations to measure program effectiveness...”*

Sempre’s IM program procedure and standard, SCG 167.0125, Sections 4.6 and 4.7, did not adequately describe the process for ensuring implementation of all recommended corrective actions during its self-assessments. Sempra must modify its program procedure and standard to include a quality assurance process and schedule for implementation of all recommended corrective actions were completed in a timely fashion.

### **Protocol I.02.a. states in part:**

*“I.02.a. The methods to measure program effectiveness provide effective evaluation of IM program performance and result in program improvements where necessary? The records to demonstrate IM program effectiveness should have the following characteristics:”*

Sempre’s IM program procedures and standards did not adequately address the Scope, Objective and frequency of the self-assessments, internal and/or external audits and management reviews to measure its IM program performance effectiveness. SED recommends that Sempra modify its program procedure and standard to address in sufficient detail the Scope, Objectives and frequency of its IM program performance effectiveness. In addition, SED recommends that Sempra program procedure establish a validation process that all feedback from its performance measures were factored into corrective action programs, preventive and mitigative measures decisions, and the threat and risk analysis processes.

### **Protocol I.02.b. states in part:**

*“I.02.b. That performance metrics are providing meaningful insight into integrity management program effectiveness? Records to demonstrate that performance metrics are providing meaningful insights into IM program effectiveness should have the following characteristics: ..... ”*

SED recommends that Sempra modify its IM program procedure and standards to address in sufficient detail, requirement that performance metrics, specifically measure and assess the effectiveness of the performance metrics meaningful insight in the IM program, establish performance goals and establish an incident matrix and risk model.

## **IX. Protocol Area J. Record Keeping:**

**Protocol J.01.a. states in part:**

*“J.01.a. i. A written integrity management program [[§192.947\(a\)](#)] ...iv. Documents to support any decision, analysis, and process developed and used to implement and evaluate each element of the baseline assessment plan and integrity management program. Documents include those developed and used in support of any identification, calculation, amendment, modification, justification, deviation and determination made, and any action taken to implement and evaluate any of the program elements.”*

SED recommends that Sempra modify its program procedure and standard to include written communications (i.e. memoranda or emails), other than the forms, procedures and white papers, that document and support any decision, analysis and process developed and used to implement and evaluate each element of the baseline assessment plan and integrity management program. Documents include those developed and used in support of any identification, calculation, amendment, modification, justification, deviation and determination made, and any action taken to implement and evaluate any of the program elements.

**X. Protocol Area K. Management of Change (MOC):**

**Protocol K.01.a. states in part:**

*“K.01.a. Verify that the reasons for program changes have been documented prior to implementation of the change(s). [[§192.909\(a\)](#)]”*

Sempra’s IM program procedure and standard did not adequately address documentation and tracking of all changes that may impact the IM program. SED recommends that Sempra modify its IM program procedure and standards to address in sufficient details, a process for documenting and tracking all changes that may impact its IM program.

**XI. Protocol Area L. Quality Assurance:**

**Protocol L.01.b. states in part:**

*“L.01.b. Verify that reviews of the integrity management program and the quality assurance program have been specified to be performed on regular intervals, making recommendations for improvement. [[ASME B31.8S-2004, Section 12.2\(b\)\(3\)](#)]”*

Sempra’s IM program procedure (TIMP 15) and standard did not adequately address how the review of the effectiveness of the “Quality Assurance Plan” (QAP) process and the effectiveness of the IM program will be conducted. SED recommends that Sempra modify its program procedure and standard to address in a sufficient detail, a requirement that the TIMP Director’s review include the examination of the effectiveness of the QAP process and the effectiveness of the TIMP program. In addition, the IM program procedure and standard should address the requirement to establish and define goals for both processes, TIMP and QAP.

**Protocol L.01.c. states:**

*“L.01.c. Verify that corrective actions to improve the integrity management program and the quality assurance process have been documented and are monitored for effectiveness. [ASME B31.8S-2004, Section 12.2(b)(7)]”*

Semptra’s IM program procedures and standards under its QAP (IMP 15) framework, addressed the activities that its QAP program will document, control and maintain at appropriate locations for the duration of the program. However, Semptra’s QAP did not address how Forms will be controlled and maintained in its quality management control. In addition, Semptra’s program procedures and standards referenced the use of Forms 2110 and 2111 in its IM program process; however, these two Forms and others (PCMR) were not adequately referenced in the Semptra’s QAP. Semptra must modify its program procedures and standards to address in sufficient details the requirements of ASME B31.8S-2004, section 12.2(b)(1) “.....determine the documentation required and include it in the quality program”. Additionally, Semptra must require the investigation of the root cause of any significant condition adverse to quality and document corrective actions taken to address program deficiencies identified in the program effectiveness review.

**Protocol L.01.d. states in part:**

*“L.01.d. Verify that when an operator chooses to use outside resources to conduct any process that affects the quality of the integrity management program, the operator ensures the quality of such processes and documents them within the quality program. [ASME B31.8S-2004, Section 12.2(c)]”*

Semptra’s QAP for ensuring the quality of services provided by outside resources listed DOT Operator Qualification program, DOT Anti-Drug & Alcohol Misuse Prevention program, O.Q Cards and Contractor Audit program as its vehicle for demonstrating compliance with ASME B31.8S-2004, Section 12.2(c). An effective quality plan must establish criteria for review of contractor deliverables, inspection of work products and tracking system necessary to confirm that the vendor is implementing the requirements. SED recommends that Semptra modify its QAP procedure and standard to address in sufficient detail, the processes it deploys to ensure the quality of services and materials provided by its outside resources are in compliance with its integrity management program. Also, Semptra should reference its Pipeline Safety Enhancement Plan (PSEP) Quality Assurance Program into its IM program QAP.

**Protocol L.02.a. states in part:**

*“L.02.a. Verify that the Integrity Management Program requires supervisory personnel to have the appropriate training or experience for their assigned responsibilities. [§192.915(a)]”*

Semptra program procedure and standard did not address or establish for its human resources department, the minimum frequency for conducting a review of personnel qualifications. SED recommends that Semptra modify its program procedure to establish a mandatory minimum frequency for conducting personnel qualification reviews, tracking of qualification deficiencies and re-qualification requirements.

**Protocol L.02.c. states in part:**

*“L.02.c. Verify the qualification of personnel who participate in implementing preventive and mitigative measures including: [[§192.915\(c\)](#)].....”*

Sempra’s IM program procedure, TIMP.15 and standard SCG 184.09 did not adequately address the quality control and verification of personnel that participates in the implementation of its preventive and mitigative measures. SED recommends that Sempra modify its program procedure and standard to address in sufficient detail, quality control and qualification verification of its personnel that participates in implementing preventive and mitigative measures.

**Protocol L.02.d. states:**

*“L.02.d. Verify that the personnel who execute the activities within the integrity management program are competent and properly trained in accordance with the quality control plan. [ASME B31.8S-2004, Section 11(a)(8) and [ASME B31.8S-2004, Section 12.2\(b\)\(4\)](#)]”*

Sempra program procedure and standard did not adequately address its process for verifying the integrity management program personnel competency and training. Sempra must modify its program procedure to address the process it will deploy to verify that its personnel engaged in pipeline integrity management are competent and trained.